EXAMPLE 41

5'-O-DMT-3'-O-[3-(N-trifluoroacetamido)propyl]-uridine

[0178] 3'-*O*-[3-(N-trifluoroacetamido)propyl]uridine is treated as per the procedure of Example 28 to give the title compound.

EXAMPLE 42

5'-O-DMT-3'-O-[3-(N-trifluoroacetamido)propyl]-uridine-2'-O-(2-cyanoethyl-N,N-diisopropyl) phosphoramidite

[0179] 5'-*O*-(DMT)-3'-*O*-[3-(N-trifluoroacetamido)propyl]uridine is treated as per the procedure of Example 29 to give the title compound.

EXAMPLE 43

3'-O-(Propylphthalimido)-cytidine

[0180] The title compounds were prepared as per the procedure of Example 21.

2'-*O*-(propylphthalimide)cytidine: ^{1}H NMR (200 MHZ, DMSO-d_6) δ 5.82 (d, 1H, C_1-H).

3'-*O*-(propylphthalimide)cytidine: ^{1}H NMR (200 MHZ, DMSO-d_6) δ 5.72 (d, 1H, C_1-H).

EXAMPLE 44

3'-O-(Aminopropyl)-cytidine

[0181] 3'-*O*-(Propylphthalimide)cytidine is treated as per the procedure of Example 25 to give the title compound.

EXAMPLE 45

3'-O-[3-(N-trifluoroacetamido)propyl]-cytidine

[0182] 3'-*O*-(Propylamino)cytidine is treated as per the procedure of Example 26 to give the title compound.

EXAMPLE 46

N4-Benzoyl-3'-O-[3-(N-trifluoroacetamido)propyl]-cytidine

[0183] 3'-*O*-[3-(N-trifluoroacetamido)propyl]cytidine is treated as per the procedure of Example 27 to give the title compound.

EXAMPLE 47

N4-Benzoyl-5'-O-DMT-3'-O-[3-(N-trifluoroacetamido)propyl]-cytidine

[0184] N^4-(Benzoyl)-3'-*O*-[3-(N-trifluoroacetamido)propyl]cytidine is treated as per the procedure of Example 28 to give the title compound.

EXAMPLE 48

N4-Benzoyl-5'-O-DMT-3'-O-[3-(N-trifluoroacetamido)propyl]-cytidine-2'-O-(2-cyanoethyl-N,N-diisopropyl) phosphoramidite

[0185] N^4-(Benzoyl)-5'-*O*-(DMT)-3'-*O*-[3-(N-trifluoroacetamido)propyl]cytidine is treated as per the procedure of Example 29 to give the title compound.

EXAMPLE 49

General procedures for oligonucleotide synthesis

[0186] Oligonucleotides were synthesized on a Perseptive Biosystems Expedite 8901 Nucleic Acid Synthesis System. Multiple 1-μmol syntheses were performed for each oligonucleotide. Trityl groups were removed with trichloroacetic acid (975 μL over one minute) followed by an acetonitrile wash. All standard amidites (0.1M) were coupled twice per cycle (total coupling time was approximately 4 minutes). All novel amidites were dissolved in dry acetonitrile (100 mg of amidite/1 mL acetonitrile) to give approximately 0.08-0.1 M solutions. Total coupling time was approximately 6 minutes (105 μL of amidite delivered). 1-H-tetrazole in acetonitrile was used as the activating agent. Excess amidite was washed away with acetonitrile. (1S)-(+)-(10-camphorsulfonyl) oxaziridine (CSO, 1.0 g CSO/8.72 mL dry acetonitrile) was used to oxidize (4 minute wait step) phosphodiester linkages while 3H-1,2-benzodithiole-3-one-1,1-dioxide (Beaucage reagent, 3.4 g Beaucage reagent/200 mL acetonitrile) was used to oxidize (one minute wait step)